

**CLAIMS**

1. A constant current termination for cable locating tones, comprising:  
a first terminal for connection to a tone conductor of a cable to be terminated;

5 a second terminal to be connected to a tone signal return path;  
a load impedance connected between the first and second terminals;  
and

an active component responsive to variations in a voltage between the first and second terminals to vary the magnitude of the load impedance to maintain a substantially constant current through the load impedance.

2. A termination according to Claim 1 wherein the load impedance is a resistance.

3. A termination according to Claim 2 including a rectifier with an input for the cable locating tones and a rectified output, the load impedance being connected across the rectified output.

4. A termination according to Claim 3 wherein the active component comprises a field effect transistor with gate, drain and source terminals, the gate and drain terminals being connected across the output of the rectifier and the gate and source terminals being connected across a load resistor.

5. A termination according to Claim 4 including a high pass filter connected across the drain and source terminals.

6. A termination according to Claim 5 including a voltage limiter connected across the gate and source terminals for limiting the voltage at the gate terminal.

7. A termination according to Claim 3 including a mains frequency blocking filter connected to the rectifier input.

8. A termination according to Claim 7 including a high pass filter connected

to the mains frequency blocking filter.

9. A termination according to Claim 3 including a surge suppressor connected between the first and second terminals.

10. A tone locating system for a cable installation having a backbone cable,  
5 a plurality of branch cables, splices coupling the branch cables to the backbone cable and tone conductors along the backbone and branch cables, the tone conductors being connected at the splices, the locating system comprising:

a tone source connected to the tone conductor of the backbone cable at an inner end of the backbone cable;

10 a plurality of terminations connected to the respective tone conductors at ends thereof remote from the tone source and the splices, each termination comprising:

a load impedance connected to the respective tone conductor and to a tone signal return path; and

15 an active component responsive to variations in a voltage between the respective tone conductor and the return path to vary the magnitude of the load impedance to maintain a substantially constant current through the load impedance.

11. A system according to Claim 10 wherein the load impedance includes a  
20 load resistor and the active component comprises means for maintaining the voltage across the load resistor substantially constant.

12. A system according to Claim 11 wherein the active component is a field effect transducer.

13. A system according to Claim 11 including a rectifier with an input  
25 connected between the tone conductor and the return path and an output connected to a series circuit including the load resistor and the source and drain terminals of the

field effect transducer.

14. A system according to Claim 13 including a high frequency pass filter connected in parallel with the drain and source terminals of the field effect transistor.

15. A system according to Claim 14 including a voltage limiting component  
5 connected across the gate and source terminals of the field effect transistor.

16. A system according to Claim 13 including a mains frequency blocking filter connected to the rectifier input.

17. A system according to Claim 16 including a high pass filter connected to the mains frequency blocking filter.

10 18. A system according to Claim 10 including a surge suppresser connected between the tone conductor and the tone signal return path.

19. A method of providing a controlled signal current on a cable having opposite inner and outer ends and a signal conductor along a cable between the inner and outer ends, said method comprising:

15 applying an electrical signal to the signal conductor adjacent the inner end of the cable;

providing a resistive termination at the outer end of the cable, connecting the signal conductor to a signal return path;

monitoring the electrical signal at the termination; and

20 maintaining a substantially constant electrical signal current at the termination by varying the resistive termination in response to variations in the electrical signal at the termination.

20. A method of providing a controlled signal current on each of a backbone cable with inner and outer ends and a signal conductor from the inner end to the outer  
25 end and a plurality of branch cables with respective inner and outer ends and with the inner ends spliced to the backbone cable, each of the branch cables having a signal

applying an electrical signal to the signal conductor at the inner end of the backbone cable;

- 5 providing resistive terminations at the outer end of the backbone cable  
and at the outer end of each branch cable, connecting the signal conductor to a signal  
return path;  
monitoring the electrical signal at each termination; and  
maintaining a substantially constant electrical signal current at each  
10 termination by varying the resistive termination in response to variations in the  
electrical signal at the termination.